

Battery check doorclosingmeter
email@glasmacher-electronic.de



Test if TGM is working

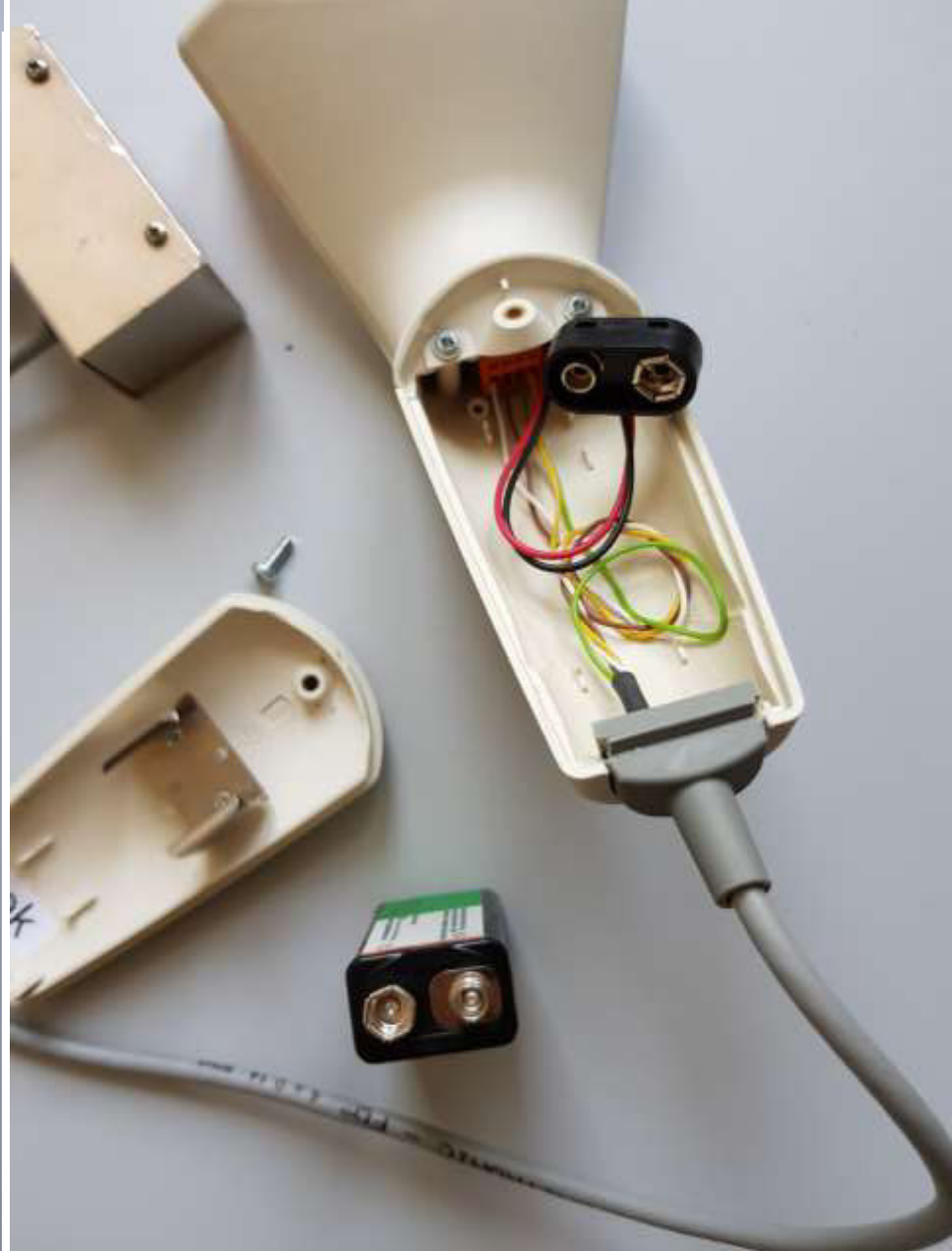


Open the battery case
by unscrewing

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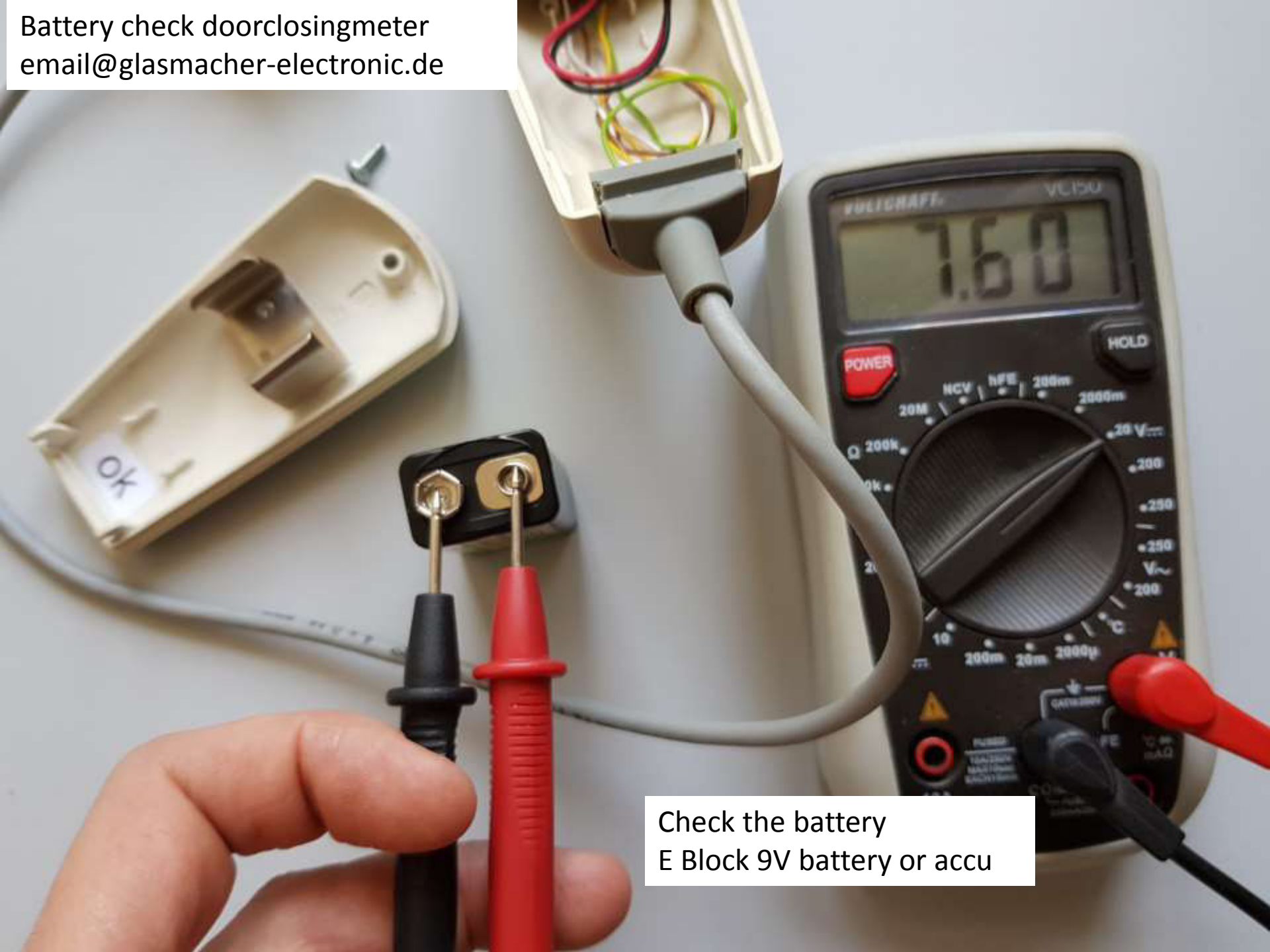


Check if battery/accu is connected properly to the battery clip



Check if any cable is damaged

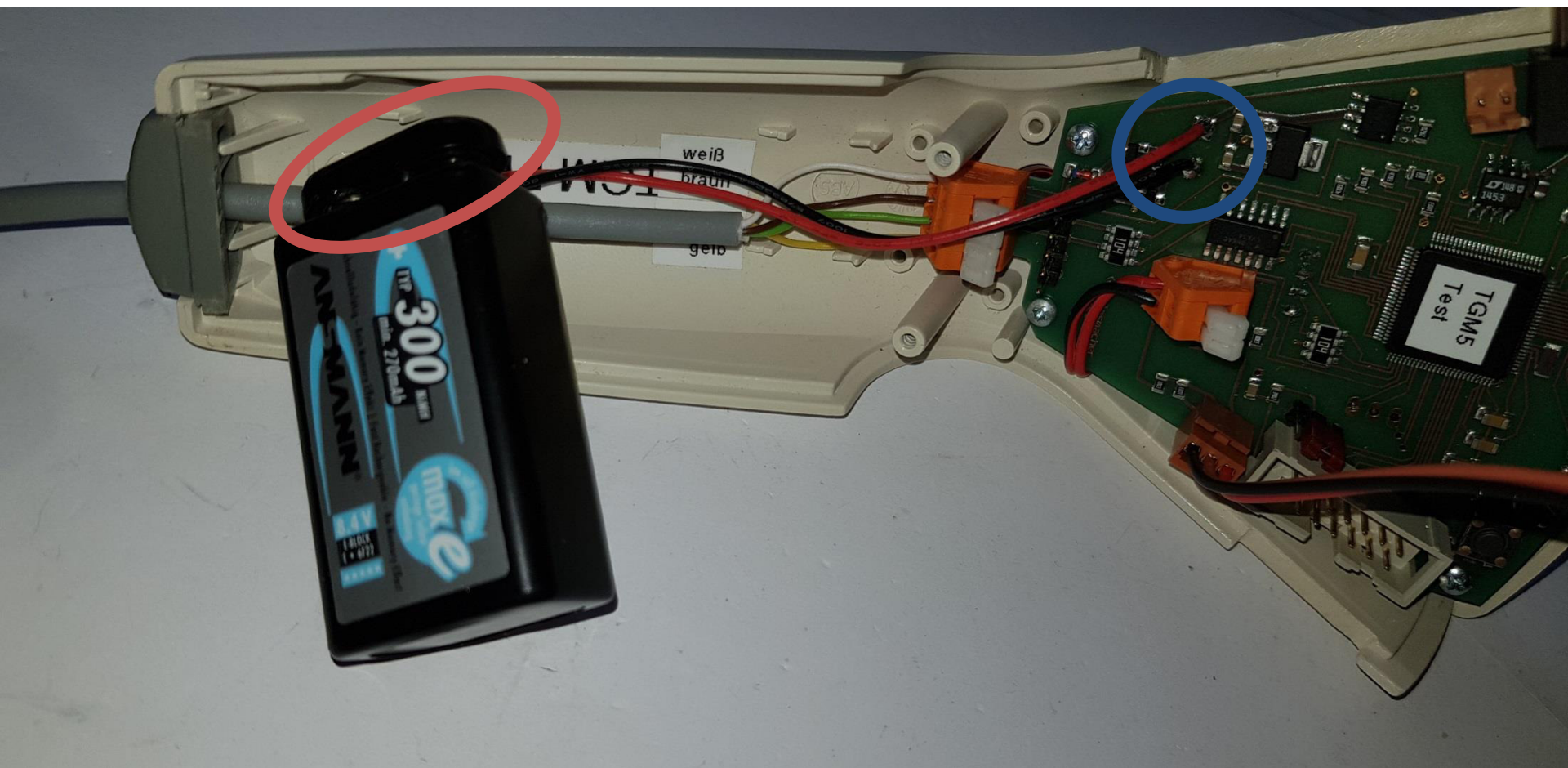
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Check the battery
E Block 9V battery or accu

Check the Battery
Clamp

Check solderd point





8. Measurement

Display: 1.18 m/sec (= door speed)

The door is not closed, the tester presses the red button.

Display: 1.20 m/sec (= current non-closing-speed)

The tester releases the red button.

Display: 1.18 m/sec (= door speed)

9. Measurement

Display: 1.29 m/sec (= door speed)

The door is closed, the tester presses the green button.

Display: 1.24 m/sec (= current door speed)

The tester releases the green button.

Display: 1.29 m/sec (= door speed)

10. Measurement

Display: 1.23 m/sec (= door speed)

The door is not closed, the tester presses the red button.

Display: 1.23 m/sec (= current non-closing-speed)

The tester releases the red button.

Display: 1.24 m/sec + arrow (= door speed)

The door speed is found

The measurement series is finished, the tester presses the white button.

Display: 1.24 m/sec (= door speed)

The tester releases the white button.

Display: 0.00

Power Supply and Charger

The TGM 5 is supplied with a power supply and charger, with an output of > 50 mA by **12 V=**. The TGM 5 is connected to the power source by a barrel connector (inner diameter: 2.1 mm). The outside of the plug is minus (-) the inside is plus (+).

Any adapter which supplies around 12 V DC ($10 \leq V \leq 12$) and a minimum of 50 mA current can be used. It is also possible to use a laboratory power supply which is set to about **12 V=**.

The TGM 5 control unit works with an internal voltage of 3.3 V=, the sensor with 5 V =. The factory-supplied 8.4 V block battery (type: ANS 300) is charged





by a regulated current and can not be overloaded or damaged if the included 12 volt battery charger is used.

Accumulator / Battery



By default, the TGM 5 door closing meter is shipped with a NiMH battery with a capacity of 300 mAh. We recommend the accumulator ANS 300 (8.4 V, 300 mAh, model no.: 5035453) of the manufacturer "ANSMANN". Charging the TGM 5 is very simple and effective; I-charging with $I_{10} = 30$ mA, so that the accumulator of the TGM 5 cannot be damaged by overcharging, for example on a weekend.

A capacity of 300 mAh is sufficient for a (theoretical) operating time of 37 hours. In fact, accumulators are rather critical components because their capacity can vary depending on the number of charging cycles and the way of charging.

Instead of using the rechargeable battery provided, it is possible to use alkaline batteries, which have the advantage of a far higher capacity [Ah] and thus a longer operating time, but they cannot be recharged and must be replaced after use.

Error messages and diagnostics

The following error messages can appear:

Display	Meaning
Err. 1	incorrect button pressed
Err. S	faulty measurement (sensor)
Err. 9	excessive number
Err. C	Calibration value damaged
Err. F	Flash memory impaired

In normal operation only the errors 1 and S occur. The error message disappears when a button is pressed or a new measurement happens.

The error **1** is displayed when an incorrect button combination is pressed, such as the red and green button simultaneously.

An incorrect measurement is displayed as error **S** and indicates that the sensor is mounted in a so unfavorable way that only one of the two sensor devices in the sensor head detects the passing door. This measurement error is evident from the fact that the sensor pulse SP1 for the outside edge or SP4 for the inside edge does not flash just as it does for a proper measurement, but is displayed for about 2 seconds.

The errors **9**, **C** and **F** are system errors that should not occur. Error **9** indicates a software error. The errors **C** and **F** are caused by a defective microchip. In the



event that error messages 9, C and F are displayed, the device should be returned to us with a description of the error and we will inspect the device and carry out necessary repairs free of charge.

The battery voltage can be displayed and checked by pressing simultaneously the white and red buttons.

The serial number is displayed by pressing simultaneously the white and green buttons. In addition, there is a sticker with the type designation and serial number inside the battery compartment resp. in the handle.

Calibration

The TGM 5 door closing meter can be calibrated by the manufacturer only. For technical reasons, a re-adjustment of the TGM 5 is not absolutely necessary. Nevertheless, it is advisable to check the equipment every two years. (see section *Calibration Cycle*)

Innovations

- New Testing mode with a bright green Test LED for quick quality control.
- The electronic circuit consumes less power at lower voltages, allowing the battery life to be tripled, to more than 20 hours.
- The housing of the TGM 5 control unit is ergonomically designed and is therefore easy to handle.
- The electronic circuit in the sensor head is completely sealed, so that it is impervious to moisture and condensation.
- In addition, the electronic circuit has been up-dated so that the sensor head can be used within the industrial temperature range of -40 ° C to + 85 ° C.
- The control unit of the TGM 5 is prepared for the installation of a digital / analog converter to output a voltage value correspondig to the door speed reading on the LC display. In versions with built-in digital / analog converter and analog output respectively, the designation is extended by the letter "-A"; e.g. TGM-A 5.